

REMARKSA. Request for Reconsideration

Applicants have carefully considered the matters raised by the Examiner in the outstanding Office Action but remain of the position that patentable subject matter is present. Applicants respectfully request reconsideration of the Examiner's position based on the amendments to the specification, the enclosed Terminal Disclaimer and the following remarks.

B. The Invention

The present invention is directed to an organic photoconductor, an image forming apparatus including the photoconductor, a process cartridge including the photoconductor and an image forming method using the photoconductor.

In one of the novel aspects of the invention, the photoconductor has a charge transport layer film thickness of 8-15  $\mu\text{m}$ , and a crossing angle of 70° or more measured between two tangent lines that border a curve drawn by plotting integrated values of detected current vs. time in TOF measurement of transient photocurrent at a field intensity of 10 V/ $\mu\text{m}$ . The Inventors have discovered that the photoconductor of the present

invention provides high quality images of 122 dpi or more with improved sharpness and gradation properties.

C. Specification Amendments

Page 4 of the application has been amended to correct a minor typographical error.

D. Claim Status and Amendments

Claims 1-20 are presented for further prosecution. Claim amendments have not been made at this time.

E. Rejections under § 112, first paragraph

Claims 1-20 had been rejected as failing to comply with the enablement requirement. The Examiner stated that the specification does not describe the structure or composition of the photoconductor. Applicants respectfully disagree.

To satisfy the enablement requirement, those in the art must be able to practice the invention without undue experimentation (see MPEP § 2164.01). Applicants submit that this burden is satisfied. On pages 14-30 of the application, the compositions of the claimed conductive support, charge generating layer, charge transport layer and optional intermediate layer are described in detail. In addition, the

examples on pages 42-65 of the application provide detailed guidance on how to make and use a photoconductor in accordance with the present invention. Specifically, Tables 1A, 1B, 2A, 2B, 3A and 3B of the examples disclose the composition of multiple photoconductors and how the composition is related to the claimed crossing angle. Applicants respectfully submit that those in the art are able to understand the application and examples and are able to make and use the present invention without undue experimentation.

F. Rejection under § 103(a)

Claims 1-20 had been rejected as being unpatentable over Kinoshita (US 5,824,444) in view of Sugiuchi (US 5,204,199) and Mizuguchi (US 5,098,810).

Kinoshita had been cited to teach a photoconductor having a charge generating layer and a charge transport layer where carrier mobility is measured using the TOF method. Mizuguchi and Sugiuchi had been cited to teach photoconductors having carrier mobilities measured using the TOF method. The Examiner stated that it would be obvious to use TOF measurements to improve the photoconductor and to improve the electrophotographic image.

1. The cited references do not teach or suggest the claimed crossing angle

The Inventors discovered that an improved photoconductor is obtained when the crossing angle is 70° or more and the charge transport layer thickness is 8-15  $\mu\text{m}$  as recited in claim 1. When the claimed ranges are satisfied, resolution is high and does not significantly depend on film thickness even when the photoconductor degrades after long term use. When the crossing angle becomes less than 70°, residual potential increases after repeated use of the photoconductor (page 12, par. 1).

As demonstrated by Tables 1A and 1B on pages 55-56 of the application, the claimed crossing angle range and the claimed charge transport layer thickness range are critical. For instance, photoconductor 1a has a charge transport layer thickness above the claimed range (17  $\mu\text{m}$ ), while photoconductor 1f has a thickness below the claimed range (6  $\mu\text{m}$ ). In comparison, photoconductors 1b, 1c, 1d and 1e satisfy the claimed thickness range. Photoconductors 1b, 1c, 1d and 1e are superior to photoconductor 1a in terms of dot reproducibility, sharpness and gradation, and are superior to photoconductor 1f in terms of gradation and fog.

In addition, photoconductor 6a has a crossing angle below the claimed range (53°), while photoconductor 1b has a crossing angle within the claimed range (75°). Photoconductor 1b is superior to photoconductor 6a in terms of dot reproducibility, image defects, sharpness, gradation and fog.

The Examiner stated that it would be obvious to produce a photoconductor having the claimed crossing angle based on the teachings of the cited references. Applicants respectfully disagree. In contrast to the present invention, the cited references do not teach or suggest any crossing angle, or even that the crossing angle is an important factor to consider when preparing a photoconductor. Thus, those in the art would have no motivation to produce the claimed photoconductor and would have no guidance on how to produce the claimed photoconductor based on the teachings of the cited references.

In addition, the cited references do not teach or suggest the criticality of the claimed crossing angle range in combination with the claimed charge transport layer thickness range as shown in the examples of the application. Thus, the cited references do not teach or suggest any crossing angle, let alone a photoconductor having the claimed crossing angle in

combination with the claimed charge transport layer thickness. Applicants therefore respectfully submit that the present invention is not obvious based on the teachings of the cited references.

G. Double Patenting Rejection

Claims 1-20 had been provisionally rejected for obviousness-type double patenting as being unpatentable over claims 1-21 of US 10/869,634.

Applicants have enclosed a Terminal Disclaimer with the corresponding fee to overcome the double patenting rejection.

H. Conclusion

In view of the foregoing and the enclosed, it is respectfully submitted that the application is in condition for allowance and such action is respectfully requested. Should any extensions of time or fees be necessary in order to maintain this Application in pending condition, appropriate requests are

hereby made and authorization is given to debit Account # 02-2275.

Respectfully submitted,

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Encl: Terminal Disclaimer with PTO 2038